User Interface PTC-04 Programmer

Introduction

This document describes the User Interface of the PTC-04 programmer. The PTC-04 User Interface groups all tooling of the PTC-04.

The UI can be installed together with MPT and the PTC-04 PSF but it is not mandatory for using the product specific function library used to program the MLX product.

For information about the different software layers, please refer to the document: ***Get_Started_With_PTC04.pdf***

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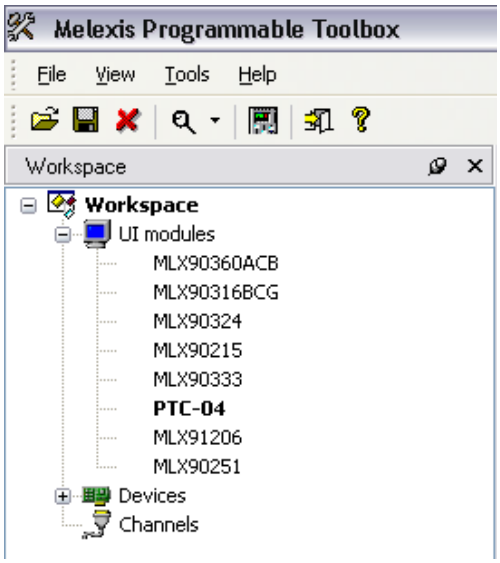


Figure 1: MPT Workspace upper left side.

Launch the MPT

To launch the Melexis Programmable Toolbox, go to Start→Programs→Melexis→Melexis Programmable Toolbox and select the Melexis Programmable Toolbox.

To open the User Interface of the PTC-04, double click on the text "**PTC-04**" listed under the UI modules in the workspace on the left side of the Melexis Programmable Toolbox.
Once the UI is active the text becomes bold.

You can also start the PTC04 UI directly trough Start→Programs→Melexis→Melexis Programmable Toolbox and select PTC04 UI.

For information about the MPT, please refer to the document: ***MPT.pdf***

User Interface PTC-04

There are five tools available for the user:

- Calibrate
- Upload firmware
- Firmware commander
- Test Programmer
- Configuration

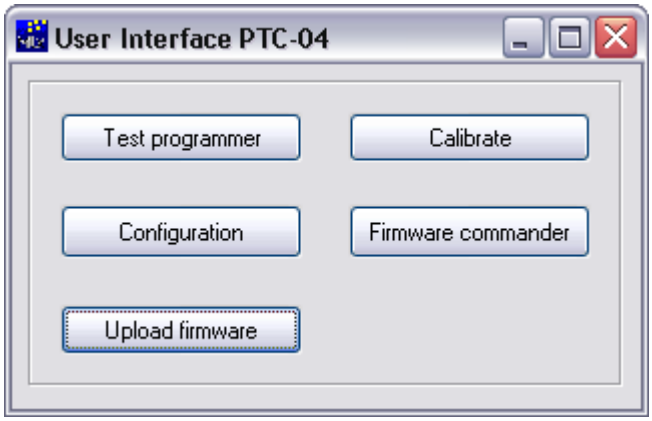


Figure 2: PTC-04 User Interface.

Calibrator

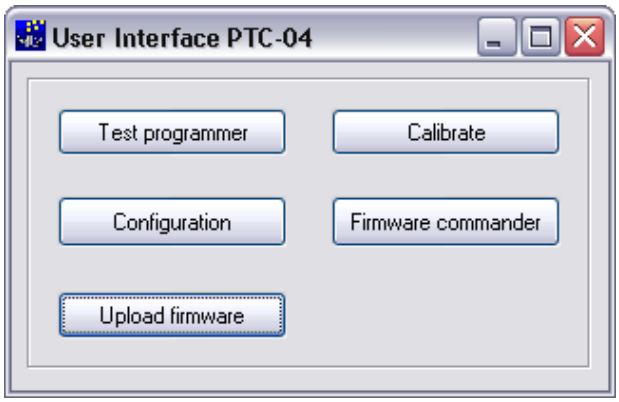
The Calibrator is a tool that allows our customer to check the calibration of their programmer. The tool will verify the deviation on measurements and supplies. Optional it allows the user to calibrate these parameters. This last item requires a good calibrated reference voltmeter.

For information on how to use this tool, we refer to the documentation of the calibrator tool:
User_Manuel_Calibration_Software_PTC04.pdf

Firmware Commander

The firmware commander is a tool that is internally used by Melexis. This tool provides you an interface to play with basic commands like setting the power supplies and performing measurements. Basically it is an Engineering tool.

Upload firmware



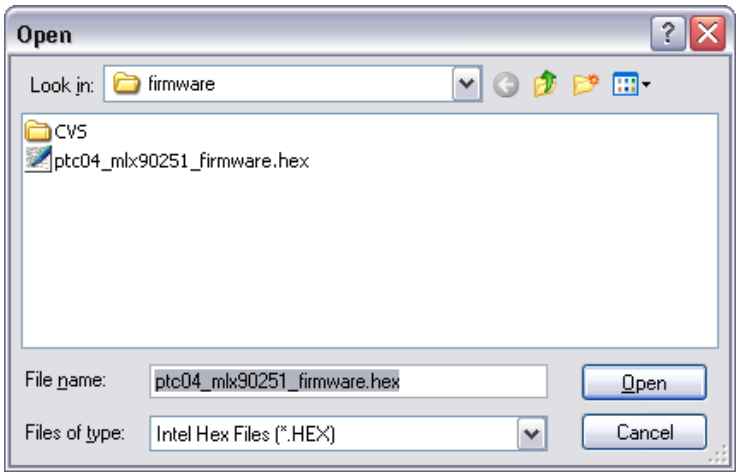
The firmware loader is needed in order to upload new or other firmware into the PTC-04 programmer.

For most MLX products there is a specific firmware, PSF and UI for the PTC-04 programmer. Therefore it is important to have the correct firmware loaded in the PTC-04 programmer.

At start-up the PSF layer checks the ID and revision of the firmware that is loaded in the PTC-04. If the firmware doesn't support the MLX product of the PSF, the PSF layer returns an error message.

Figure 3: PTC-04 User Interface.

In such a case you have to upload the correct firmware:



- To start, press the button "Upload Firmware" on the PTC-04 User Interface.
- Select the firmware needed for your MLX product.

The firmware filename is called ***ptc04_mlx*****_firmware.hex or FIR******AAMLX.hex.***

The marks ***** stand for the MLX product name.

For ex.: ptc04_mlx90251_firmware.hex or FIR090264AAMLX.hex.

Figure 4: Open file.

Ones the file is opened, the firmware is loaded in to the PTC-04 programmer.

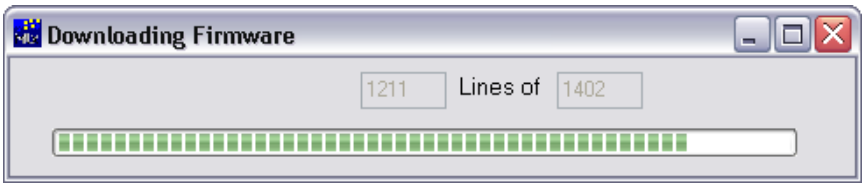


Figure 5: Loading firmware.

- If the software requests to reset the PTC-04, please press the small button next to the RS232 connector.

Do not use the power switch to reset the PTC04 programmer!

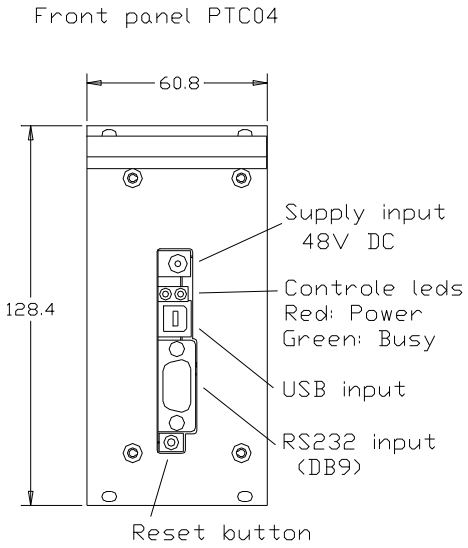


Figure 6: Reset button

Afterwards the software verifies if the upload was done correctly.

Figure 7: Verifying firmware.

The firmware ID and revision can also be checked with the Configuration tool. See Chapter Configuration.

Test Program

The test program is made to perform a quick check of the hardware. It allows the user to verify if there is any hardware damage on his PTC-04 programmer. The test checks the functionality of the fixed power supplies, programmable power supplies, the internal voltmeter, etc…

- To start, press the button "Test programmer" on the PTC-04 User Interface.
- Press the "Start" button to run the hardware check.

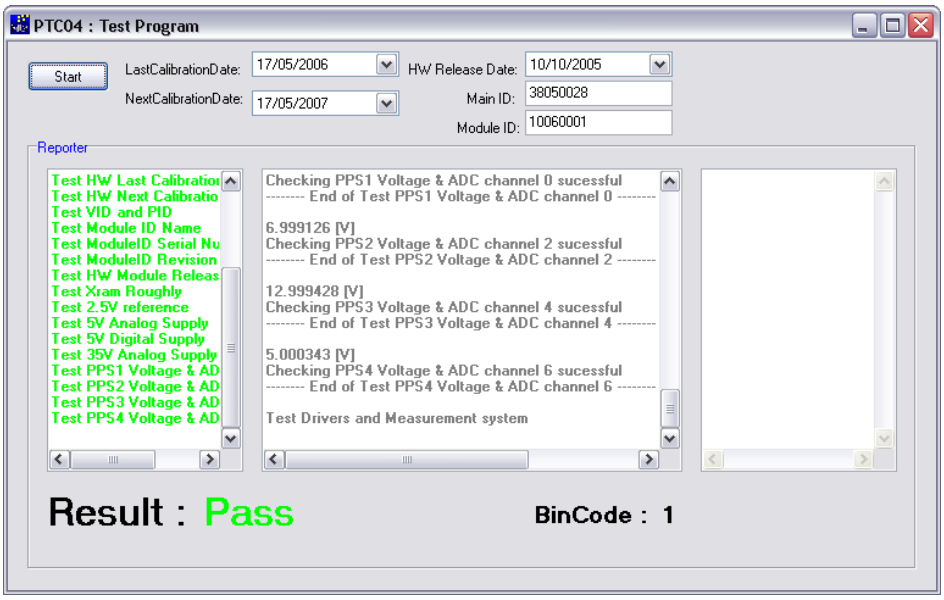


Figure 8: Test Program. Result = Pass.

In the middle of the window all tests are listed that were performed by the software. On the left, all tests that passed are listed. The tests that failed are listed on the right.

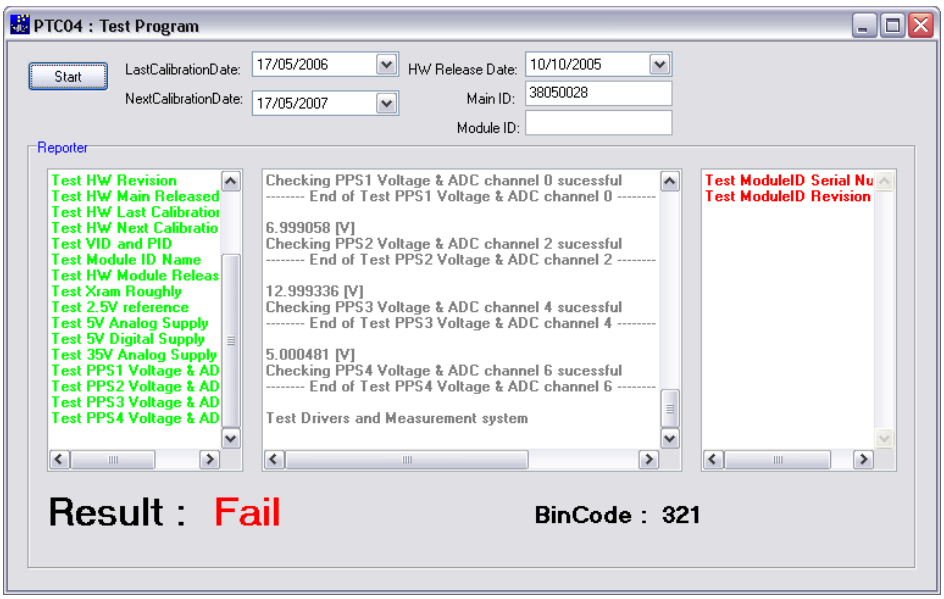


Figure 9: Test Program. Result = Fail.

Note: If the firmware and Daughter Board configuration don't match than the relays on the daughter Board can be switched or activated in such a way it could trigger a false error or fails in the test program.

Configuration

The tool configuration is used to check the hardware and firmware ID of the PTC-04 programmer.

Hardware ID

The PTC04 programmer has 2 PCB's: the Main Board and the Daughter Board. Both boards have a hardware ID description. The hardware ID is stored in an EEPROM on the board.

The most important part of the hardware ID is the HW Name and HW Revision. These are used by the software DLL's to verify the connected hardware type.

The EEPROM also contains data on the status of the programmer like: Last Calibration, Next Calibration and HW Status.

The HW Status can be used to mark a PTC-04 as "not to be used".

Remark 1, 2 etc… can be used to store additional information on the setup and the usage.

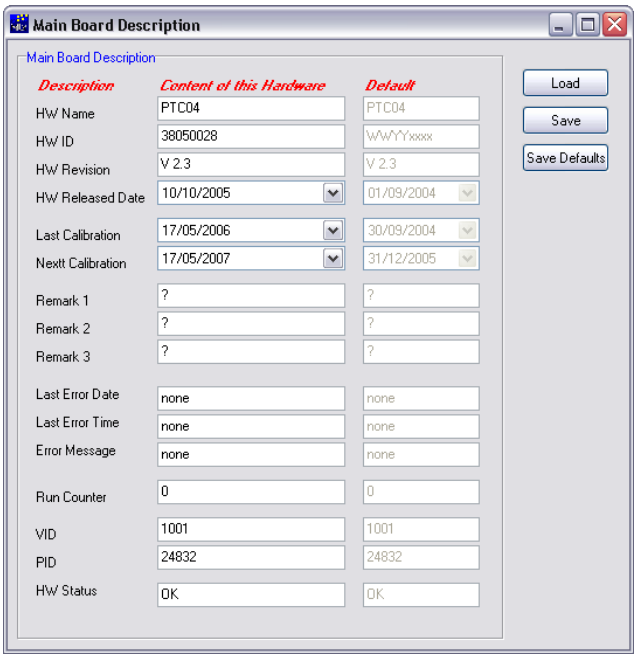


Figure 10: Main Board Description.

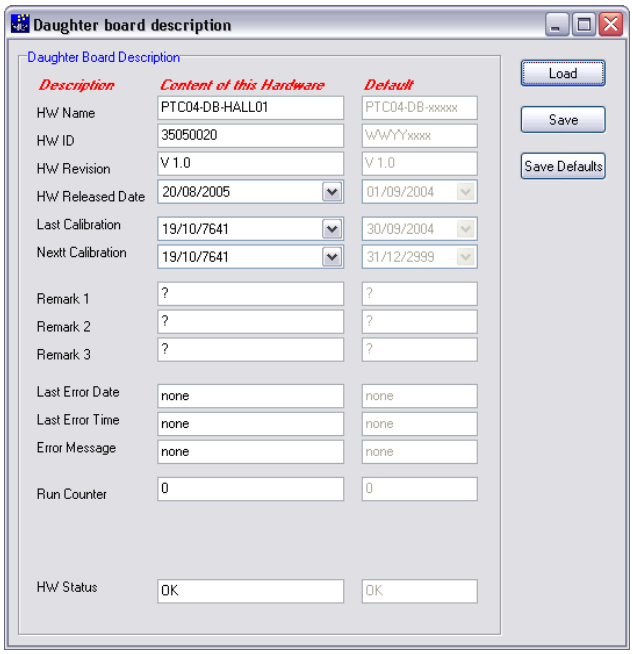


Figure 11: Daughter board description.

On the Main Board and Daughter Board Description there are three buttons.

- **Load**

With this button you down load the board description from the EEPROM.

- **Save and Save Defaults**

With this button you up load the modified or default board description in the EEPROM.

Melexis advises **not** to modify the Main board or Daughter Board **HW description**.

If you modify the HW description of the Main Board or the Daughter Board the software may no longer recognise the hardware.

Firmware ID

Firmware ID is a tool made to check the name and revision of the firmware loaded in the PTC-04 programmer.

The firmware contains general functions of the PTC04 and product specific functions. The product specific commands are made to communicate with the specific MLX product.

It's important that the correct firmware is loaded in the PTC04 programmer. Software ID functions allow higher layers to check if the firmware can be used for that specific MLX product.

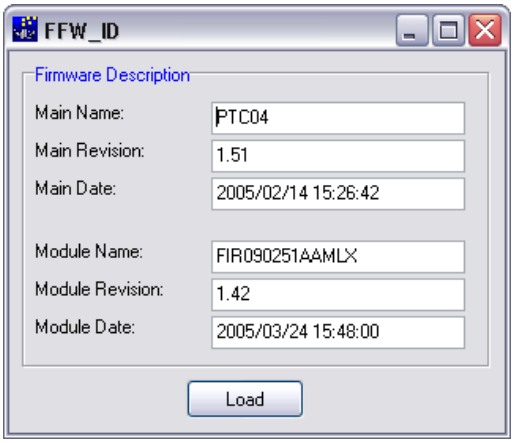


Figure 12: FW_ID.

- **Load**

  With this button you load the description of the firmware that is currently in the PTC-04 programmer.

The Fuses tool is internally used by Melexis. This tool is for info purpose only.

Contact

For the latest version of this document, go to our website at www.melexis.com.

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